



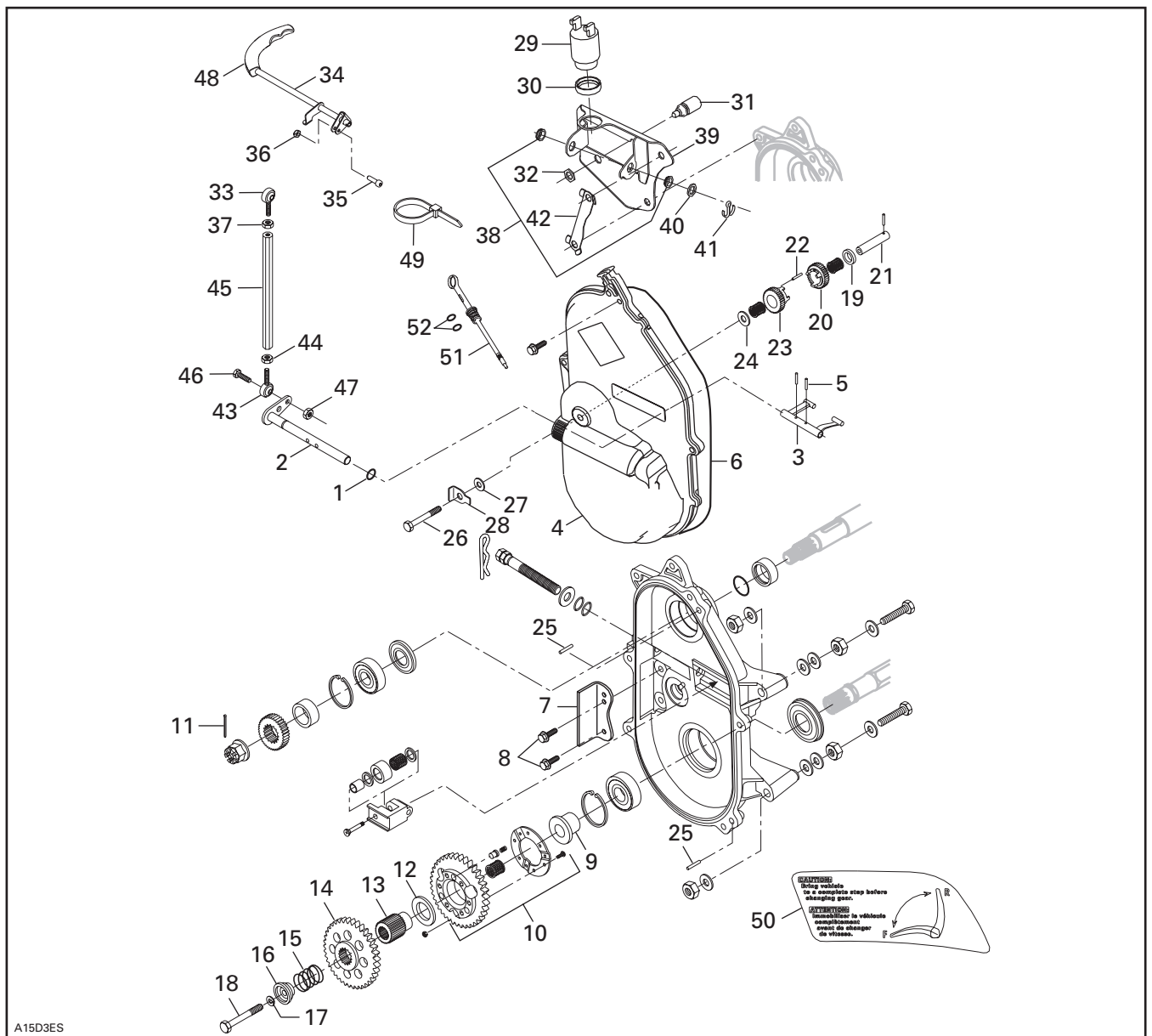
**REVERSE TRANSMISSION KIT
(P/N 860 424 000)**

⚠ WARNING

For safety reasons, this kit must be installed by an authorized Ski-Doo® snowmobile dealer. Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one. This instruction sheet should be given to the purchaser. This kit is designed for specific applicable models only. It is not recommended for units other than those for which it was sold.

NOTE: Installation time is approximately 2.5 hours.

PARTS TO BE INSTALLED



A15D3ES

- | | |
|--|-------------------------------|
| 1. O-Ring | 27. Copper Washer M8 |
| 2. Fork Shaft | 28. Locking Tab |
| 3. Fork | 29. Back-Up Alarm |
| 4. Chaincase Cover | 30. Plastic Nut |
| 5. Spring Pin (2) | 31. Switch (assembly) |
| 6. O-Ring | 32. Nut (2) |
| 7. Chain Slider | 33. Ball Joint RH Side Thread |
| 8. Self-Tapping Hexagonal Bolt (2) | 34. Welded Handle |
| 9. Flanged Bushing | 35. Socket Screw M6 x 20 |
| 10. Lower Sprocket (assembly) (44 teeth) | 36. Elastic Stop Nut M6 |
| 11. Cotter Pin | 37. Tie Rod Jam Nut M6 |
| 12. Washer | 38. Flanged Bushing (2) |
| 13. Coupling Shaft | 39. Handle Support |
| 14. Sliding Sprocket (56 teeth) | 40. Washer |
| 15. Release Spring | 41. Cotter Pin |
| 16. Cap | 42. Locking Tab |
| 17. Spring Lock Washer M10 | 43. Ball Joint LH Side Thread |
| 18. Hexagonal Bolt M10 x 50 | 44. Jam Nut LH Side Thread |
| 19. Ring | 45. Tie Rod |
| 20. Drive Sprocket (19 teeth) | 46. Hexagonal Bolt M6 x 20 |
| 21. Reverse Shaft (assembly) | 47. Elastic Stop Nut M6 |
| 22. Rubber Alignment Pin | 48. Handle Grip |
| 23. Reverse Sprocket (19 teeth) | 49. Locking Tie (2) |
| 24. Spacer | 50. Decal |
| 25. Dowel Pin (2) | 51. Dipstick |
| 26. Hexagonal Bolt M8 x 90 | 52. O-Ring (2) |

INSTRUCTIONS

Chaincase Preparation

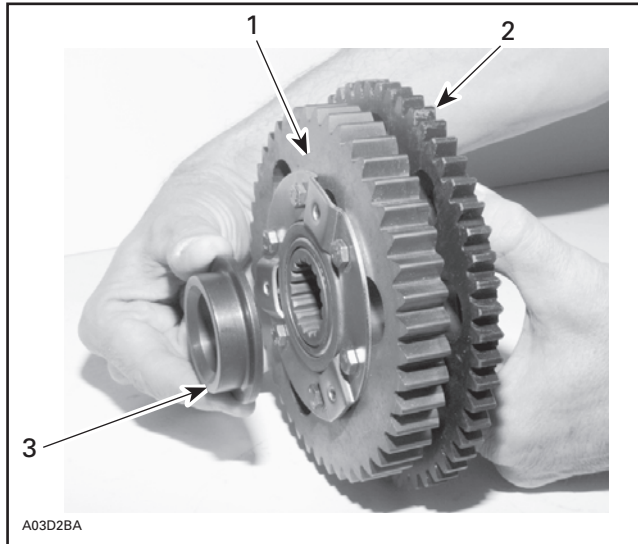
1. Remove tuned pipe(s) and muffler.
2. Remove chain tension.
3. Remove drain plug from chaincase and drain oil.
4. Remove chaincase cover.
5. Remove rubber muffler support from old chaincase cover.
6. Unscrew bolt retaining lower sprocket (M10 x 25). Remove cap, lower sprocket and spacer.
7. Remove cotter pin, nut on countershaft, chain and top sprocket.

Chaincase Cover

1. Install O-ring **no. 1** on fork shaft **no. 2** and spread grease on it.
2. Install fork **no. 3** and shaft in new chaincase cover **no. 4**. Shaft lever must be pointing toward inside cover.
3. Secure with spring pins **no. 5**.
4. Install O-ring **no. 6** in cover.
5. Insert dowel pins **no. 25** into chaincase cover.
6. Install rubber muffler support on new chaincase cover.

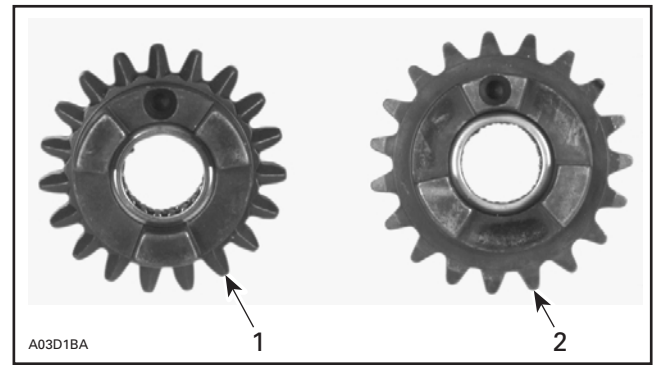
Finalizing Chaincase Assembly

1. Install chain slider **no. 7** and secure with self-tapping hexagonal bolts **no. 8**.
2. Reinstall drain plug and tighten.
3. Install flanged bushing **no. 9** and lower sprocket ass'y **no. 10** over drive axle and properly mesh with chain.



1. 44-teeth gear
2. 56-teeth gear
3. Flanged spacer

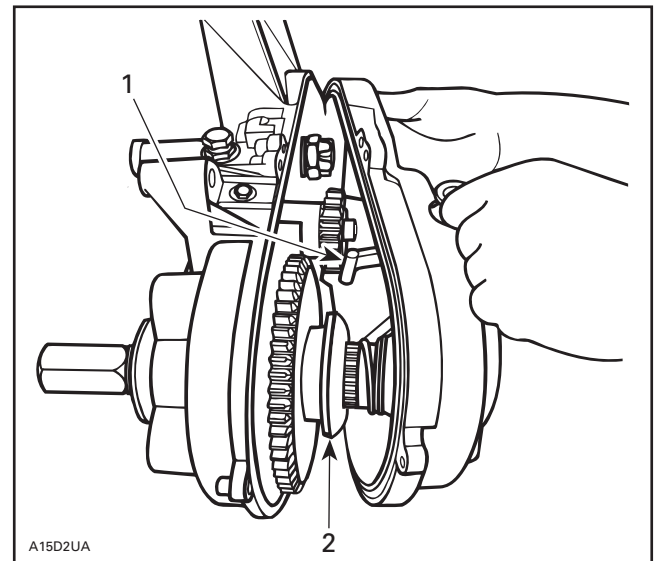
4. Install washer **no. 12** onto coupling shaft **no. 13** then insert on drive axle underneath lower sprocket ass'y.
5. Reinstall spacer and upper sprocket, then torque castellated nut to 75 N•m (55 lbf•ft). Secure nut with a new cotter pin **no. 11**.
6. On reverse shaft **no. 21**, install ring **no. 19** with drive sprocket **no. 20** and install shaft in chaincase housing making sure to properly position spring pin in housing slot.
7. Install sliding sprocket **no. 14**, release spring **no. 15**, cap **no. 16**, spring lock washer **no. 17** and hexagonal bolt **no. 18**.
8. Apply Loctite 271 (red) on bolt threads, use sparingly. Torque bolt 42 to 45 N•m (31 to 33 lbf•ft).
9. Install rubber alignment pin **no. 22** and reverse sprocket **no. 23**. Drive sprocket hole and reverse gear hole must be aligned to insert rubber alignment pin.
10. Install spacer washer **no. 24**.



1. Reverse sprocket (hole between dogs)
2. Drive sprocket (hole on dog)

11. Fully tighten chain adjusting screw by hand, then back off only far enough for hair pin to engage in locking hole.
12. Join new chaincase cover to chaincase by passing fork tabs behind sliding sprocket lip. Take care to avoid losing dowel pins.

CAUTION: Chaincase cover must completely lay against chaincase.



1. Fork tabs
2. Sliding sprocket lip

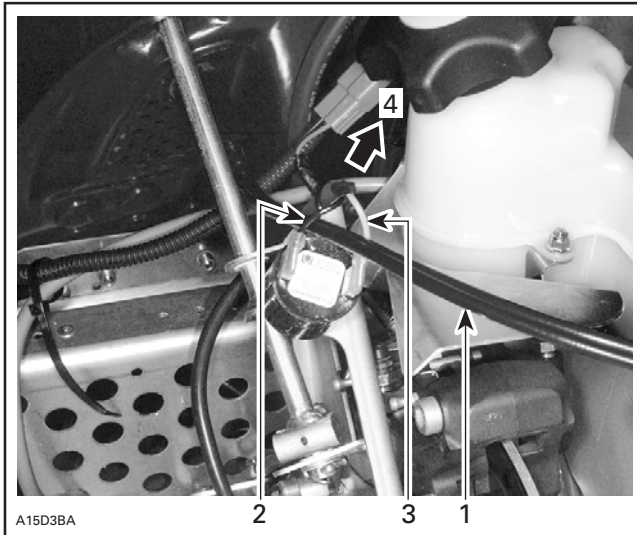
13. Tighten chaincase bolts in a criss-cross sequence beginning with top center.
14. Install reverse shaft hexagonal bolt **no. 26** with copper washer **no. 27** against chaincase cover and locking tab **no. 28** against bolt head. Position angle end of tab to rear then torque bolt 13.5 to 17 N•m (123 to 155 lbf•in). Bend locking tab against bolt head.

SHIFTING LINKAGE ASSEMBLY

1. Screw jam nut **no. 37** to ball joint **no. 33** then ball joint to tie rod **no. 45** upper end.
2. Screw jam nut **no. 44** to ball joint **no. 43** then ball joint to tie rod lower end.
3. Secure lower ball joint to fork shaft using hexagonal bolt **no. 46** and elastic stop nut **no. 47**. Both jam nuts **no. 37** and **no. 44** will serve as shifter rod (bar) adjusters.
4. Install 2 flanged bushings **no. 38** into handle support **no. 39** (from inside) and insert welded handle **no. 34**. Install washer **no. 40** on the outside and secure with cotter pin **no. 41**.

Back-Up Alarm Installation

1. Install back-up alarm **no. 29** into hole provided in handle support, secure using plastic nut **no. 30**. Refer to following illustration.

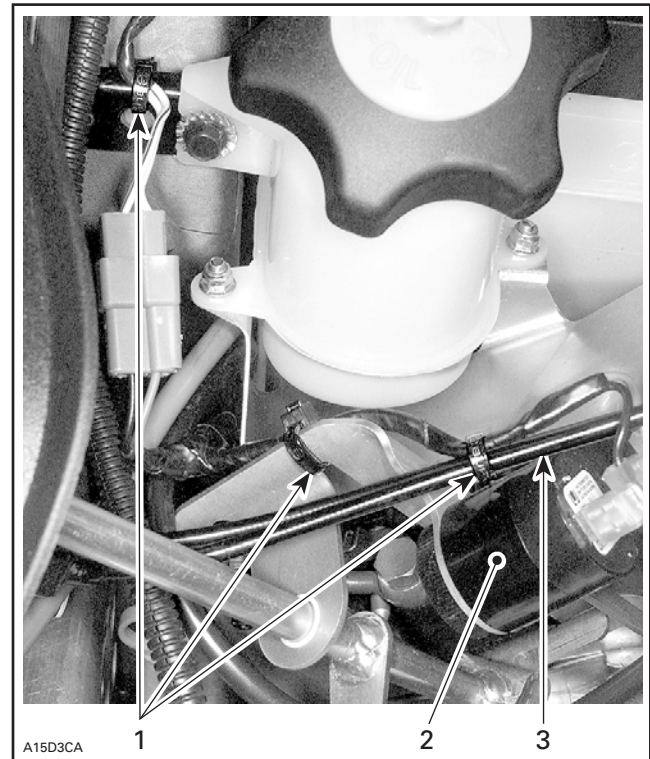


1. Choke cables
2. Wire above choke cables
3. Wire under choke cables
4. Secure back-up alarm in this angle

2. Install switch assembly **no. 31** into hole provided in handle support and secure using nut **no. 32**.

SHIFTING LINKAGE ASSEMBLY INSTALLATION

1. Drill 12.5 mm (1/2 in) hole in console. Refer to alignment embossment behind console for positioning.
2. Release locking tabs then remove bolts that are retaining brake caliper to chaincase.
3. Slide handle portion of shifting linkage ass'y through hole in console. Position handle support so as the 2 lower holes align with existing holes for brake caliper.
4. Install locking tab **no. 42** and secure using existing bolts. Bend locking tabs into place.
5. Insert ball joint **no. 33** in welded handle, secure with socket screw **no. 35** (head down) and elastic stop nut **no. 36**.
6. Install handle grip **no. 48** on welded handle.
7. Connect terminals to the alarm, make sure that RED/BLUE wire is connected to alarm negative post. Connect tab connector housing to vehicle harness. Secure wiring harness with locking ties **no. 49**, as per following illustration.



1. Locking ties
2. Back-up alarm
3. Choke cables

ADJUSTMENTS

1. Shift into reverse gear.

NOTE: If it is impossible to shift into reverse gear, shorten tie-rod and try again. Turn the brake disk to free the gears. If it is still impossible, check if the fork engages in the sliding gear or disassemble the cover to inspect components.

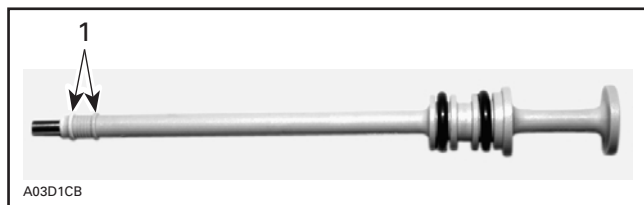
2. Completely loosen tie rod jam nut **no. 37** on the gear shift linkage.
3. Turn shifter handle in reverse position making sure all play is removed.

NOTE: It is normal to feel a slight friction when shifting into gear.

4. Statically test transmission operation in forward and reverse positions.
5. Hold linkage and tighten tie rod jam nut **no. 37**.
6. Adjust back-up alarm so that it sounds when transmission is in reverse gear while engine is running.
7. Install decal **no. 50** on console above handle.

FILLING WITH OIL

1. Fill chaincase with chaincase synthetic oil (P/N 413 803 300). Oil capacity is approximately 250 mL (8 oz).
2. Install O-rings **no. 52** on new dipstick **no. 51**.
3. Check oil level with new dipstick, oil level must be between the marks.



1. *Oil level marks*

4. Reinstall tuned pipe(s) and muffler.
5. Test drive to ensure proper operation of transmission.

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1.	414 773 200	O-Ring	Joint torique
2.	504 151 806	Fork Shaft	Arbre de fourchette
3.	504 075 800	Fork	Fourchette
4.	504 151 845	Chaincase Cover	Couvercle du carter de chaîne
5.	414 772 500	Spring Pin (2)	Goupille-ressort (2)
6.	415 046 400	O-Ring	Joint torique
7.	504 151 808	Chain Slider	Coulisseau de chaîne
8.	210 251 180	Self-Tapping Hexagonal Bolt (2)	Boulon hexagonal autotaraudeur (2)
9.	504 076 300	Flanged Bushing	Douille à épaulement
10.	581 095 900	Lower Sprocket (assembly) (44 teeth)	Pignon inférieur (complet) (44 dents)
11.	371 801 300	Cotter Pin	Goupille fendue
12.	504 094 300	Washer	Rondelle
13.	504 097 700	Coupling Shaft	Arbre d'accouplement
14.	504 096 800	Sliding Sprocket (56 teeth)	Pignon coulissant (56 dents)
15.	504 096 600	Release Spring	Ressort de rappel
16.	504 151 964	Cap	Capuchon
17.	234 100 602	Spring Lock Washer M10	Rondelle à ressort M10
18.	207 005 044	Hexagonal Bolt M10 x 50	Boulon hexagonal M10 x 50
19.	504 078 700	Ring	Bague
20.	581 098 200	Drive Sprocket (19 teeth)	Pignon d'entraînement (19 dents)
21.	504 151 972	Reverse Shaft (assembly)	Arbre de marche arrière (complet)
22.	570 048 600	Rubber Alignment Pin	Tige d'alignement de caoutchouc
23.	581 122 200	Reverse Sprocket (19 teeth)	Pignon de marche arrière (19 dents)
24.	504 077 300	Spacer	Entretoise
25.	732 620 001	Dowel Pin (2)	Goupille d'assemblage (2)
26.	207 089 044	Hexagonal Bolt M8 x 90	Boulon hexagonal M8 x 90
27.	504 082 900	Copper Washer M8	Rondelle de cuivre M8
28.	504 087 700	Locking Tab	Patte de verrouillage
29.	414 792 102	Back-Up Alarm	Avertisseur de marche arrière
30.	414 805 101	Plastic Nut	Écrou de plastique
31.	515 175 318	Switch (assembly)	Interrupteur (complet)
32.	250 100 012	Nut (2)	Écrou (2)
33.	414 773 400	Ball Joint RH Side Thread	Joint à rotule à filetage à DROITE
34.	504 151 810	Welded Handle	Poignée soudée
35.	205 062 060	Socket Screw M6 x 20	Vis à tête creuse M6 x 20
36.	232 561 414	Elastic Stop Nut M6	Écrou d'arrêt élastique M6

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37.	232 061 414	Tie Rod Jam Nut M6	Contre-écrou de la barre d'accouplement M6
38.	504 151 818	Flanged Bushing (2)	Douille à épaulement (2)
39.	504 151 823	Handle Support	Support de poignée
40.	503 189 264	Washer	Rondelle
41.	371 800 800	Cotter Pin	Goupille fendue
42.	507 029 900	Locking Tab	Patte de verrouillage
43.	414 773 500	Ball Joint LH Side Thread	Joint à rotule à filetage à GAUCHE
44.	232 066 414	Jam Nut LH Side Thread	Contre-écrou à filetage à GAUCHE
45.	504 151 814	Tie Rod	Barre d'accouplement
46.	207 162 044	Hexagonal Bolt M6 x 20	Boulon hexagonal M6 x 20
47.	232 561 600	Elastic Stop Nut M6	Écrou d'arrêt élastique M6
48.	570 064 600	Handle Grip	Poignée
49.	414 115 200	Locking Tie (2)	Attache (2)
50.	516 000 458	Decal	Autocollant
51.	504 151 750	Dipstick	Jauge de niveau d'huile
52.	414 969 400	O-Ring (2)	Joint torique (2)